

Amendments to the claims

1. (currently amended) A catalyst, comprising:

a metal particulate having a particle size of less than about ~~100~~ 70 Angstroms, said metal particulate consisting essentially of at least one non-noble metal; and

a support.

2. (currently amended) The catalyst of claim 1, wherein said particulate has a particle size of ~~less than about 70 Angstroms~~ between about 10 and about 70 Angstroms.

3. (currently amended) The catalyst of claim 1, wherein said particulate has a particle size of ~~less than about 50 Angstroms~~ between about 10 and about 50 Angstroms.

4. (previously amended) The catalyst of claim 1, wherein said particulate has a particle size of between about 10 and about 40 Angstroms.

5. (previously amended) The catalyst of claim 1, wherein said particulate has a particle size of between about 10 and about 30 Angstroms.

6. (previously amended) The catalyst of claim 1, wherein said particulate has a particle size of between about 10 Angstroms and about 20 Angstroms.

7. (original) The catalyst of claim 1, wherein said metal particulate is between about .0001% to about 99% by weight of said catalyst.

8. (previously amended) The catalyst of claim 1, wherein said particulate has a particle proximity of between about 2 Angstroms and about 300 Angstroms.

9. (currently amended) The catalyst of claim 1, wherein said particulate comprises ~~at least one metal selected from the group consisting of nickel and~~ a nickel alloy.

10. (currently amended) The catalyst of claim 1, wherein said particulate consists essentially of nickel ~~at least one metal selected from the group consisting of nickel and nickel alloy.~~

11. (original) The catalyst of claim 9, wherein said nickel alloy comprises at least one element selected from the group consisting of Al, Co, Sn, Mn, Ti, and Fe.

12. (original) The catalyst of claim 9, wherein said nickel alloy comprises at least one element selected from the group consisting of Al, Co, Sn, Mn, and Ti.

13. (currently amended) The catalyst of claim 9, wherein said nickel alloy is an alloy selected from the group consisting of NiCo alloy, NiMn alloy, NiCoAl alloy, NiCoMnTi alloy, and NiCoMnFe alloy.

14. (original) The catalyst of claim 9, wherein said nickel alloy has an fcc crystal orientation.

15. (original) The catalyst of claim 1, wherein said support comprises at least one inorganic oxide.

16. (original) The catalyst of claim 1, wherein said support comprises at least one metal oxide.

17. (original) The catalyst of claim 16, wherein said at least one metal oxide comprises at least one element selected from the group consisting of Ni, Co, Mn, Ti, Zr, Fe, and the rare earth elements.

18. (original) The catalyst of claim 16, wherein said at least one metal oxide comprises at least one oxide selected from the group consisting of manganese oxide, nickel manganese oxide, and mixtures thereof.

19. (original) The catalyst of claim 16, wherein said at least one metal oxide is multivalent.

20. (original) The catalyst of claim 16, wherein said at least one metal oxide comprises an oxide of Mn, Ni, Co, and Ti.

21. (original) The catalyst of claim 16, wherein said at least one metal oxide comprises an oxide of Mn, Ni, Co, Ti, and Fe.

22. (original) The catalyst of claim 16, wherein said at least one metal oxide comprises an oxide of Mn, Co, and Ti.


23. (previously amended) The catalyst of claim 16, wherein said at least one metal oxide comprises fine-grained oxides and course-grained oxides.

24. (original) The catalyst of claim 16, wherein said at least one metal oxide is microcrystalline.

25. (original) The catalyst of claim 1, wherein said support comprises carbon.

26. (original) The catalyst of claim 1, further comprising zeolite.

27. (original) The catalyst of claim 1, wherein said catalyst is compositionally graded within said support.

 28. (original) The catalyst of claim 1, wherein said particulate is substantially uniformly distributed throughout said support.

29. (original) The catalyst of claim 1, wherein said catalyst is formed by leaching at least a substantial portion of the bulk of a hydrogen storage alloy.

 30. (currently amended) A catalyst, comprising:

a nickel and/or nickel alloy particulate having a particle size of less than about ~~100~~ 70 Angstroms, said nickel alloy lacking platinum and palladium; and

a support.

31. (currently amended) The catalyst of claim 30, wherein said particulate has a particle size of ~~less than about 70 Angstroms~~ of between about 10 and about 70 Angstroms.

32. (previously amended) The catalyst of claim 30, wherein said particulate has a particle size of between about 10 and about 50 Angstroms.

33. (previously amended) The catalyst of claim 30, wherein said particulate has a particle size of between about 10 and about 40 Angstroms.

34. (previously amended) The catalyst of claim 30, wherein said particulate has a particle size of between about 10 and about 30 Angstroms.

35. (previously amended) The catalyst of claim 30, wherein said particulate has a particle size of between about 10 and about 20 Angstroms.

36. (original) The catalyst of claim 30, wherein said particulate is about .0001% to about 99% by weight of said catalyst.

37. (previously amended) The catalyst of claim 30, wherein said particulate has a particle proximity of between about 2 Angstroms and about 300 Angstroms.

38. (original) The catalyst of claim 30, wherein said nickel alloy comprises at least one element selected from the group consisting of Al, Co, Sn, Mn, Ti, and Fe.

39. (original) The catalyst of claim 30, wherein said nickel alloy comprises at least one element selected from the group consisting of Al, Co, Sn, Mn, and Ti.

40. (currently amended) The catalyst of claim 30, wherein said nickel alloy is an alloy selected from the group consisting of NiCo alloy, NiMn alloy, NiCoAl alloy, NiCoMnTi alloy, and NiCoMnFe alloy.

41. (original) The catalyst of claim 30, wherein said nickel alloy has an fcc crystal orientation.

42. (original) The catalyst of claim 30, wherein said support comprises at least one inorganic oxide.

43. (original) The catalyst of claim 30, wherein said support comprises at least one metal oxide.

44. (original) The catalytic material of claim 43, wherein said at least one metal oxide comprises at least one element selected from the group consisting of Ni, Co, Mn, Ti, Zr, Fe, and the rare earth elements.

45. (original) The catalytic material of claim 43, wherein said at least one metal oxide comprises an oxide of Mn.

46. (previously amended) The catalyst of claim 43, wherein said at least one metal oxide comprises an oxide of Mn and Ni.

47. (original) The catalyst of claim 43, wherein said at least one metal oxide comprises an oxide of Mn, Ni, Co, and Ti.

48. (original) The catalyst of claim 43, wherein said at least one metal oxide comprises an oxide of Mn, Ni, Co, Ti, and Fe.

49. (original) The catalyst of claim 43, wherein said at least one metal oxide comprises an oxide of Mn, Co, and Ti.

50. (original) The catalyst of claim 43, wherein said at least one metal oxide comprises fine-grained oxides and course-grained oxides.

51. (original) The catalyst of claim 30, wherein said support material comprises carbon.

52. (original) The catalyst of claim 30, further comprising zeolite.

53. (original) The catalyst of claim 30, wherein the density of said particulate is graded within support.

54. (original) The catalyst of claim 30, wherein said particulate is substantially uniformly distributed throughout said support.

55. (original) The catalyst of claim 30, wherein said catalyst is formed by leaching at least a substantial portion of the bulk of a hydrogen storage alloy.

Claims 71-79 (cancelled)

Claims 56-70 and 80-89 (withdrawn)

90. (new) A catalyst, comprising:

a metal particulate having a particle size of less than about 100 Angstroms, said metal particulate comprising a nickel alloy, said nickel alloy lacking platinum and palladium, said nickel alloy comprising at least one element selected from the group consisting of Al, Co, Sn, Mn, Ti, and Fe.

91. (new) The catalyst of claim 90, wherein said particulate has a particle size of less than about 70 Angstroms.

92. (new) The catalyst of claim 90, wherein said particulate has a particle size of between about 10 and about 70 Angstroms.

93. (new) The catalyst of claim 90, wherein said particulate has a particle size of between about 10 and about 50 Angstroms.

94. (new) The catalyst of claim 90, wherein said particulate has a particle size of between about 10 and about 40 Angstroms.

95. (new) The catalyst of claim 90, wherein said particulate has a particle size of between about 10 and about 30 Angstroms.

96. (new) The catalyst of claim 90, wherein said particulate has a particle size of between about 10 and about 20 Angstroms.

97. (new) The catalyst of claim 90, wherein said nickel alloy comprises Co.

98. (new) The catalyst of claim 90, wherein said nickel alloy comprises Mn.

99. (new) The catalyst of claim 90, wherein said nickel alloy is an alloy selected from the group consisting of NiCo alloy, NiCoAl alloy, NiCoMnTi alloy, NiCoMnFe alloy, and NiMn alloy.

100. (new) The catalyst of claim 90, wherein said support comprises at least one metal oxide.